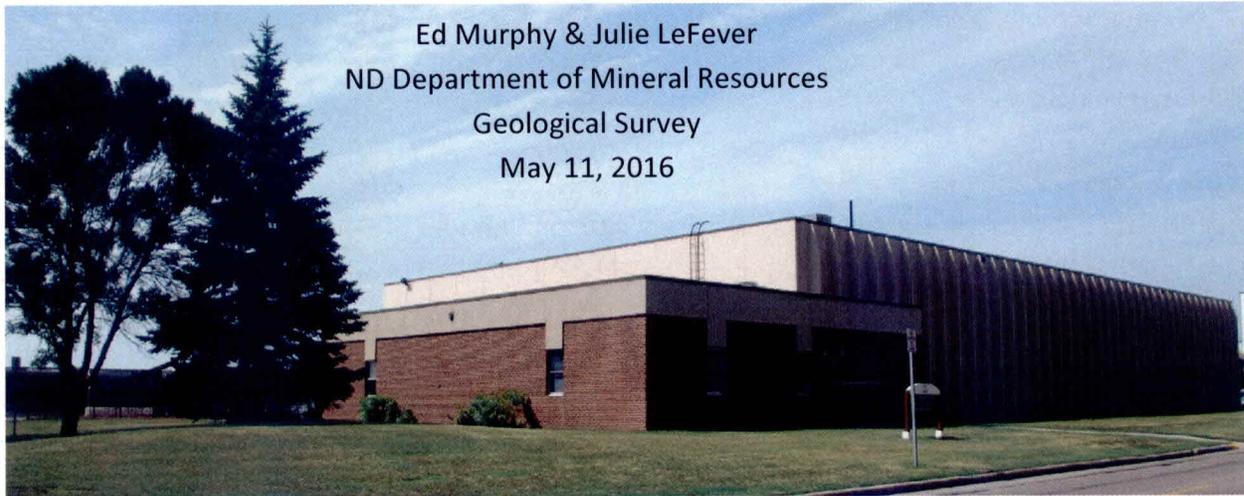


ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

Senator Rich Wardner, Chair

Tour of the Wilson M. Laird Core and Sample Library



Built in 1980, the original core library consisted of a 13,000 ft² warehouse and 2,000 ft² of office and laboratory space. The lone laboratory occupied an area of 900 square feet.



The expanded core library will consist of 28,000 ft² of additional warehouse and 12,000 ft² of laboratories, meeting rooms, and offices. The three laboratories on the main floor are 725, 1,275, and 1,275 ft² in area for a total of 3,275 ft² and the four laboratories on the second floor have a total area of 1,765 ft².

The facility currently houses >75 miles of core (400,000 feet in 132,000 boxes) and 50,000 sample boxes.

Financial Impact of the Core and Sample Library

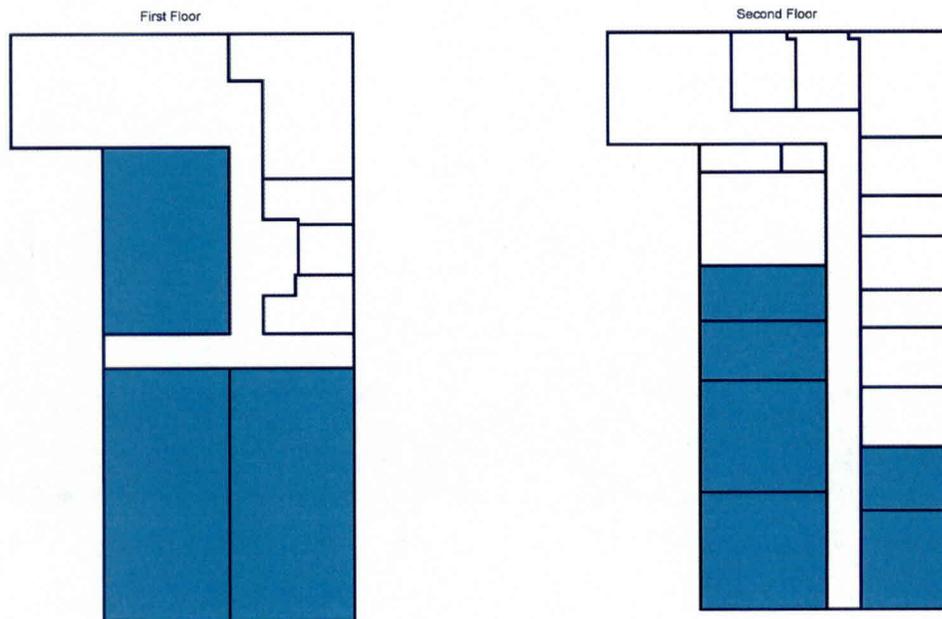
Between 2010–2014, Whiting Petroleum drilled 206 oil wells in Billings and Stark counties targeting the Pronghorn Member of the Bakken Formation in this area. In their own words, they drilled these wells and pursued this oil play based upon their work in the Wilson M. Laird Core and Sample Library. By the end of the first quarter of 2016, these wells had produced **24,071,989 barrels of oil**. Just the extraction tax from this project would pay for **four** core library expansions.

Advantages of the new facility:

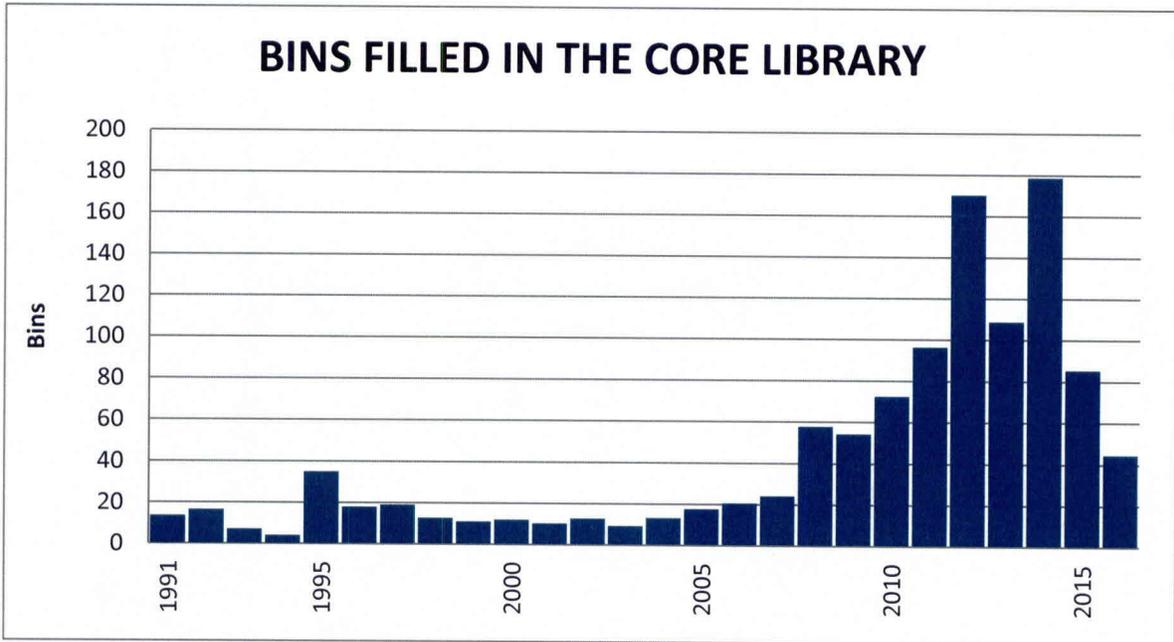
- 1) The new facility should be able to store core for a minimum of 30 years (based on an all-time high in 2014) and a maximum of 90 years (based on 1965-2016 average). The old warehouse is completely full.
- 2) One of the new laboratories will have black light capabilities which can be used to detect hydrocarbons in the rock – core had to be taken into the bathroom to test in the old facility.
- 3) Having three core labs on the main floor will enable multiple companies to use the facility at the same time, rather than having to wait weeks or months to get into the facility.
- 4) When only one company is in at a time, we will be able to layout core in all three labs so they can easily compare more core and perhaps identify subtle differences that might otherwise have gone undetected.
- 5) Core that is to be looked at by multiple companies over stretches of time can now be left on the core lab tables rather than picked up and brought back multiple times saving on the wear and tear on the core and our workers.
- 6) Students typically study core at a slower pace so we are creating a lab on the second floor where their cores can be left out for longer periods of time.
- 7) This expanded facility will now have sufficient room to host core workshops, thus bringing more scientists to North Dakota.
- 8) We will be able to house specialized equipment to analyze the core.
- 9) The petrography lab will be expanded enabling multiple scientists to use the microscopes.
- 10) The new receiving area will allow tractor-trailer delivery to the facility for the first time in 16 years.



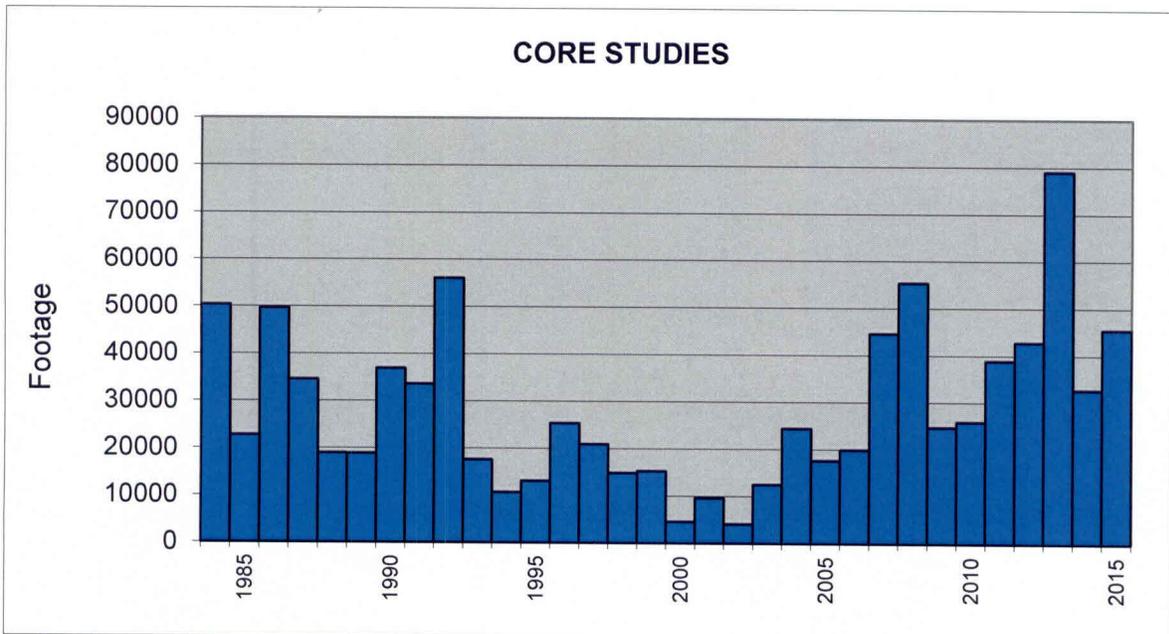
The old core laboratory. Five scientists from the Texas Bureau of Economic Geology were working in the lab the day this photo was taken.



First floor drawing on the left and second floor on the right. The laboratories are shown in blue.



2014 was a record year for cores and samples coming into the core library for archiving. Although coring has slowed down, we are still getting a number of sample boxes coming into the core library.



The amount of core studied in 2015 remained strong as companies evaluated potential acquisitions.



The thin brick for an exterior wall panel are in place and ready for a three-inch-layer of concrete to be poured over it at the Wells Concrete plant in Grand Forks. Photo taken on February 24, 2016.



Completed 10 ft x 25 ft wall panels are curing at the Grand Forks plant. Steel cable, under tension, is used to reinforce the concrete rather than rebar. Photo taken on February 24, 2016.



Completed core library wall panels stored in the Wells Concrete yard. The panels consist of the exterior skin, three inches of reinforced concrete, three inches of foam board, and six inches of reinforced concrete. Photo taken on February 24, 2016.



Wall panels being hoisted into place along the north wall of the new core library warehouse. The panels are 10 ft x 25 ft and weigh 28,000 pounds. Panels were typically unloaded, set in place, welded, and braced within 30 minutes. Photo taken March 1, 2016.



The concrete columns and beams were also typically installed within a 30 minute timeframe. Photo taken on March 2, 2016.



The roof sections slide right into the slots at the tops of the wall panels. Photo taken on March 2, 2016.